

Preventing Inadvertent Perioperative Hypothermia



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On behalf of the Pre-admission, Pre-assessment, Day of Surgery
admissions ward, theatre & recovery teams & technical support

Belfast City Hospital, BHSCT

GAIN, 22nd October 2015



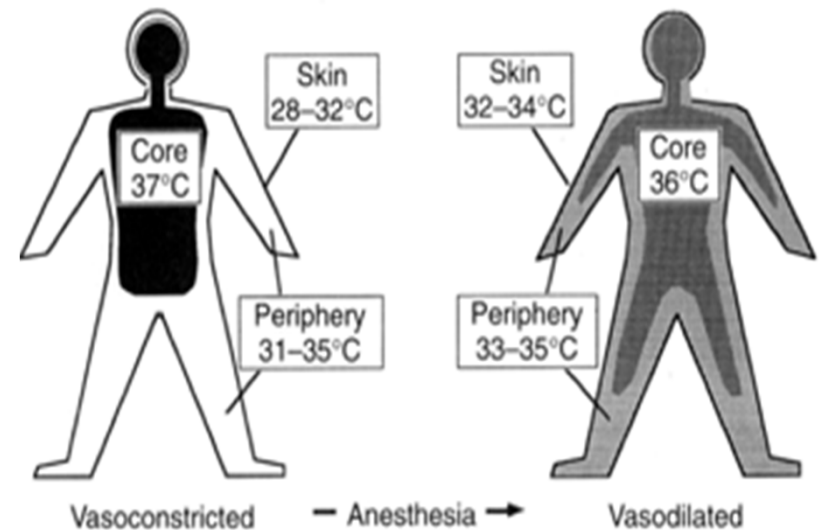
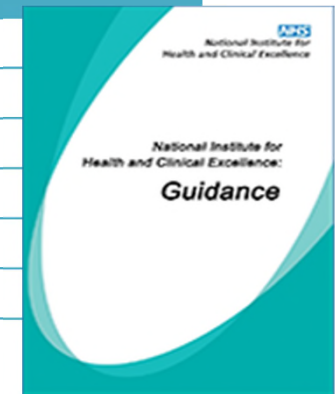
Belfast Health and
Social Care Trust

Background: Perioperative Hypothermia

- $T < 36^{\circ}\text{C}$ associated with morbidity, mortality & \uparrow LOS
- Anaesthesia: loss of thermoregulation
- Surgical exposure
- NICE CG 65, 2008
 - preventing inadvertent perioperative hypothermia
 - interventions
 - pre-admission
 - pre-, intra- & postoperative

Figure 1: Outcomes Associated with Perioperative Hypothermia

\uparrow Blood loss
\uparrow Recovery time \uparrow LOS
\uparrow Post-op shivering
\uparrow Cardiac events
\uparrow Wound infection
\downarrow Patient satisfaction



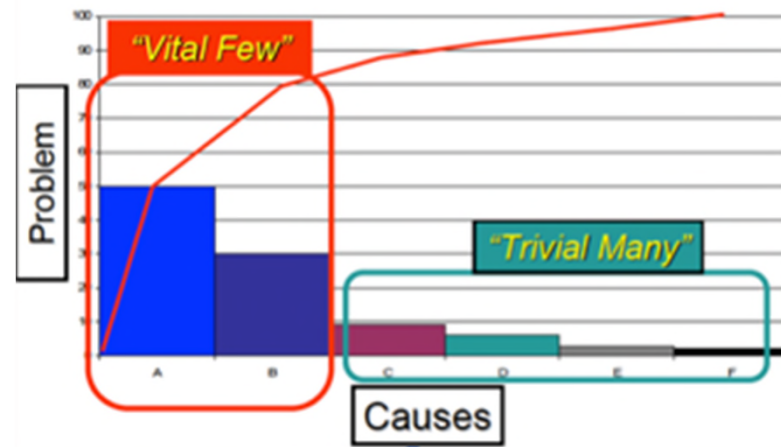
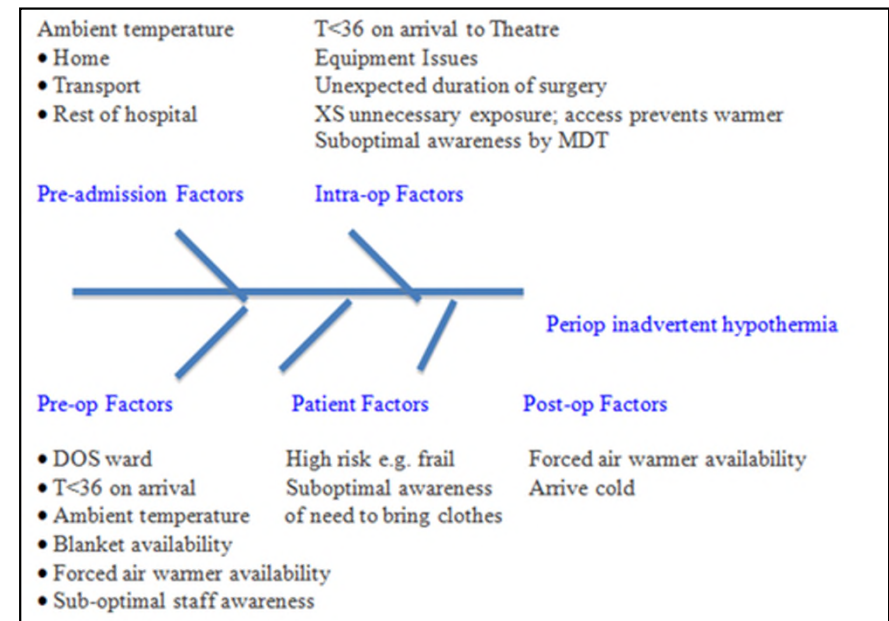
Establishing the need for change

- Initial patient focus group
 - Day Of Surgery ward (DOSW)
 - admitting majority of patients undergoing surgery in BCH
- Baseline snap survey
 - 40% of patients arriving to DOSW were $T < 36^{\circ}\text{C}$
 - no active warming before arrival to theatre



Engaging with relevant stakeholders

- TPOT group (The Productive Operating Theatre)
- A fishbone diagram
- Pareto Principle (80:20 rule)
 - one intervention at each stage
 - Pre-admission
 - Pre-op
 - Intra-op
 - Post-op



Hypothermia Care Bundle

1. **Pre-Admission:** Patient advised to keep warm
2. **Pre-op Ward:** Active warming aiming $>36.5^{\circ}\text{C}$
3. **Anaesthetic room:** Aim min. 36.0°C
4. **Theatre:** Maximal warming; minimal exposure



Pre-Theatre

1. Pre-admission letter

- Bring additional clothing
- Tell staff if they feel cold
- **Potential for hypothermia to delay surgery**



2. Pre-op Ward

- Min 2 blankets
- Ambient temperature maintained 21°C
- **Forced Air Warming**
- **Equipment: Warmers x4 (supplied free by manufacturer)**
- **Education: Warm if $\leq T36.5$ (until comfortably warm)**



Intra-op phase

3. Anaesthetic Room

- **Temperature measurement**
 - pre-induction and every 30 min
- **Forced Air Warming**
 - instigated from anaesthetic room

4. Theatre

- **Pre-warm** theatre and bed
- Minimise patient exposure
- Fluid warming

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Empowering staff to support the change

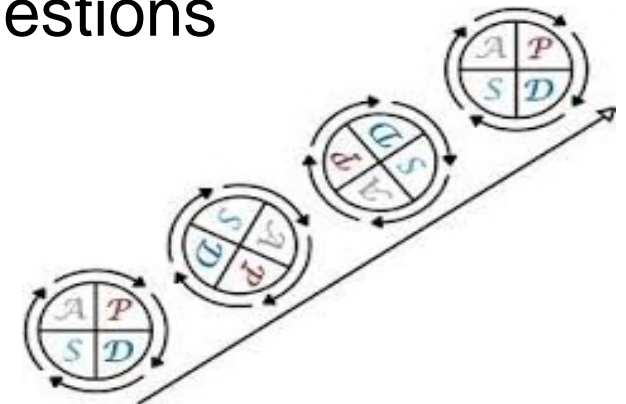
- **Buy in**

- audit & staff meetings
- motivational notice board
- run charts updated weekly

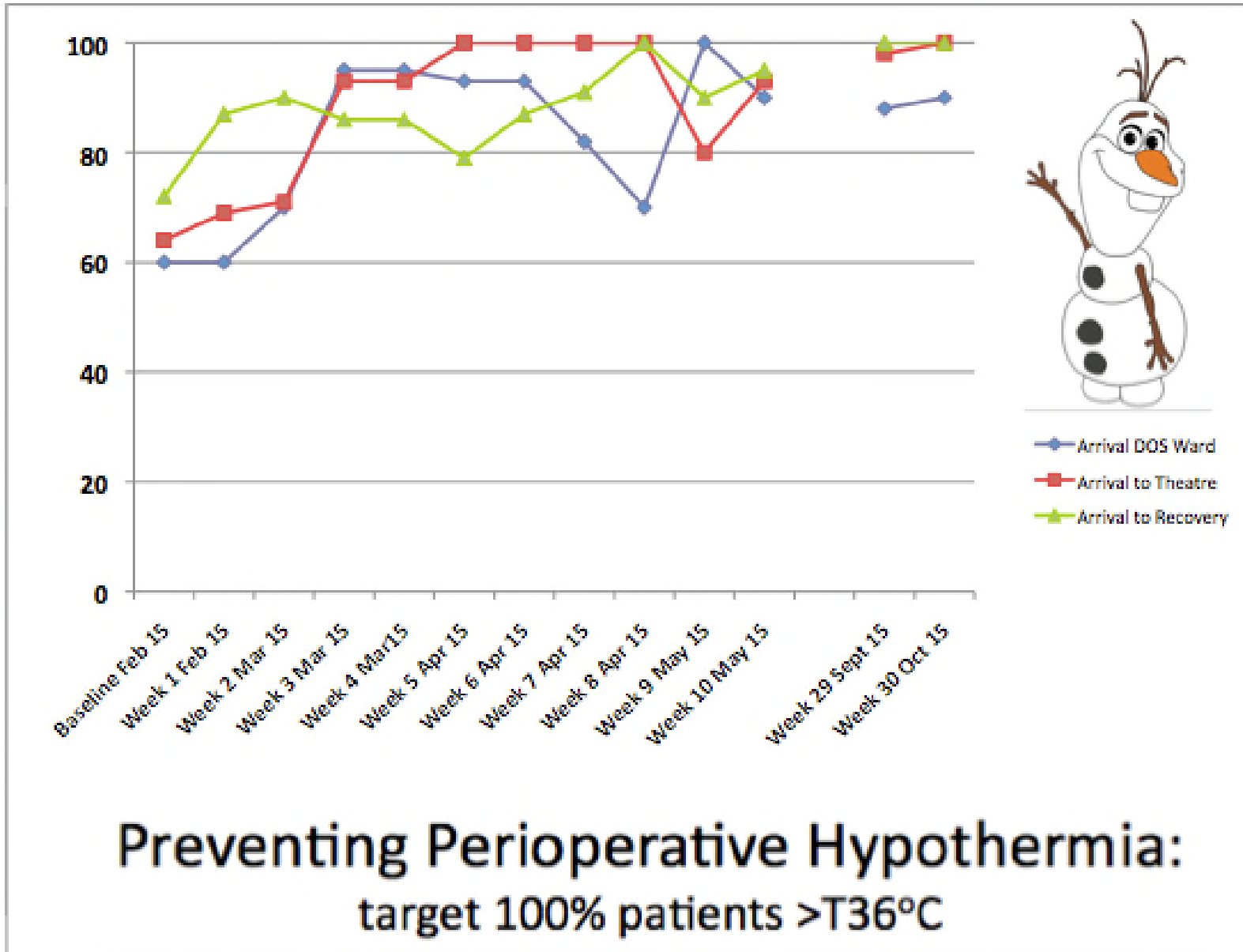


- **Barriers and enablers**

- Identified via: **PDSA** (Plan, Do, Study, Act) cycles
- Solved through: listening to staff suggestions
- Supported by: TPOT group



Conclusions



Patient Experience

- *“I dressed as warmly as I could...I’m still warm...feel my hands. I know it’s important”*
- *“I was so nervous but once I cozied up under the heated blanket to wait for my surgery I felt so much better”*
- *“Can we bring these blankets to the ward afterwards?”*



The Journey

- Engaged and empowered staff to work collaboratively
- Simplicity in design; use of networking; sought advice
- Regular feedback
 - shared vision and learning
 - raised staff morale
 - tangible improvements to the quality of care
- The future
 - extend our work across inpatient journeys
 - sharing our experiences across BHSCCT sites...and GAIN!

Thank you

- **Reference**

<http://www.nice.org.uk/Guidance/CG65>

